

What is claimed is:

1. A monitoring apparatus for a tape automated bonding process, which is used to attach a plurality of flexible substrates constructed in the form of a tape to an edge of a rigid substrate, the monitoring apparatus comprising:

5 a sensor for detecting the variation of an optical signal and being moved along the edge of the rigid substrate so as to monitor the quantity of the flexible substrates according to the number of the variation of the optical signal.

2. A monitoring apparatus for a tape automated bonding process as claimed in claim 1, wherein the rigid substrate is a glass substrate of a liquid crystal display.

10 3. A monitoring apparatus for a tape automated bonding process as claimed in claim 1, wherein the tape flexible substrate has an electronic member disposed thereon.

4. A monitoring apparatus for a tape automated bonding process as claimed in claim 3, wherein the electronic member is a driving integrated circuit of a liquid crystal display panel.

15 5. A monitoring apparatus for a tape automated bonding process as claimed in claim 3, wherein the electronic member is a controlling integrated circuit of a liquid crystal display panel.

20 6. A monitoring apparatus for a tape automated bonding process as claimed in claim 3, wherein the tape flexible substrate is mounted on the rigid substrate by means of an isotropic conductive adhesive/film.

7. A monitoring apparatus for a tape automated bonding process as claimed in claim 3, further comprising:

- a processor connected to the sensor; and
- a warning device connected to the processor,

25 whereby when the processor detects the flexible substrate abnormally installed, the warning device is actuated.

8. A monitoring method for a tape automated bonding process, which is used to attach a plurality of flexible substrates constructed in the form of a tape to an edge of a rigid substrate, the monitoring apparatus comprising:

providing a sensor for detecting the variation of an optical signal;

providing a processor connected to the sensor;

moving the sensor along the edge of the rigid substrate on which the flexible substrates are attached; and

5 monitoring the quantity of the flexible substrate by means of the processor counting the number of the variation of the optical signal.

9. A monitoring method for a tape automated bonding process as claimed in claim 8, wherein the rigid substrate is a glass substrate of the liquid crystal display.

10 10. A monitoring method for a tape automated bonding process as claimed in claim 9, wherein the tape flexible substrate has an electronic member disposed thereon.

11. A monitoring method for a tape automated bonding process as claimed in claim 10, wherein the electronic member is a driving integrated circuit of a liquid crystal display panel.

15 12. A monitoring method for a tape automated bonding process as claimed in claim 10, wherein the electronic member is a controlling integrated circuit of a liquid crystal display panel.

13. A monitoring method for a tape automated bonding process as claimed in claim 8, wherein the tape flexible substrate is mounted on the rigid substrate by means of an isotropic conductive adhesive/film.

20 14. A monitoring method for a tape automated bonding process as claimed in claim 8, further comprising the steps of:

providing a predetermined value; and

25 comparing the number counted by the processor with the predetermined value, wherein when the number is not equal to the predetermined value, then the processor senses the flexible substrate abnormally installed.

15. A monitoring method for a tape automated bonding process as claimed in claim 14, wherein the processor is further connected to a warning device, whereby when the processor senses the flexible substrate abnormally installed, the warning device is actuated.

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